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(56) Documents Cited

GB 2319084 A

GB 2317450 A

GB 2226405 A

US 5842282 A

US 5604987 A

US 5531031 A

(58) Field of Search

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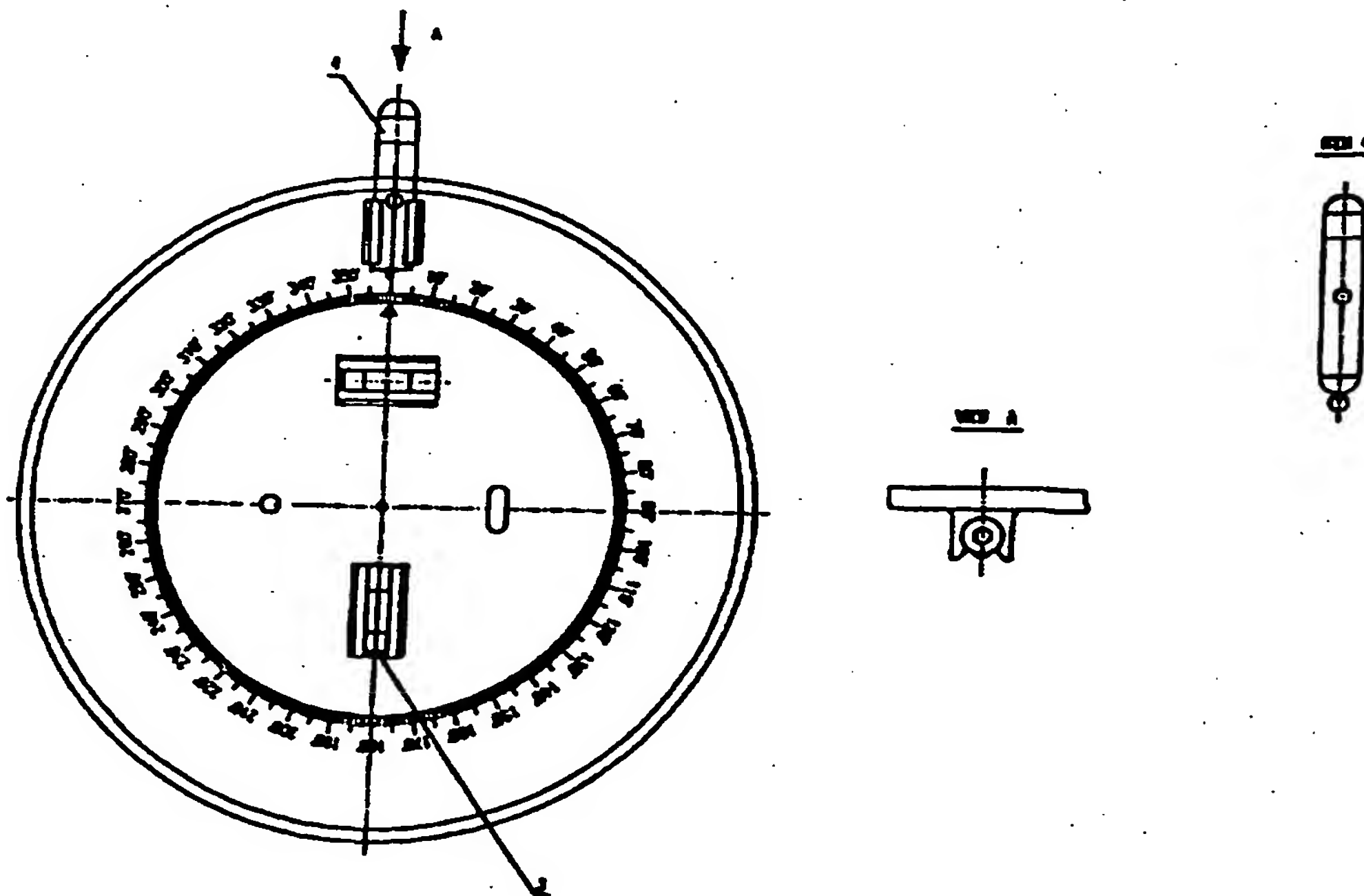
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(54) Abstract Title

Laser alignment device

(57) An alignment device with liquid vials 3 for leveling purposes and a laser module 4 for projecting a laser beam to a distant point for the purposes of positioning and aligning components in a variety of applications. Two contra rotating elements 1,2 with markings in degrees allow the beam to be accurately projected in any direction and at some distance from the invention. The device can be held by hand or fixed to the workpiece by means of flat headed screws or adhesive. A hole in the centre is provided for marking purposes.

FIGURE X



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Figure x

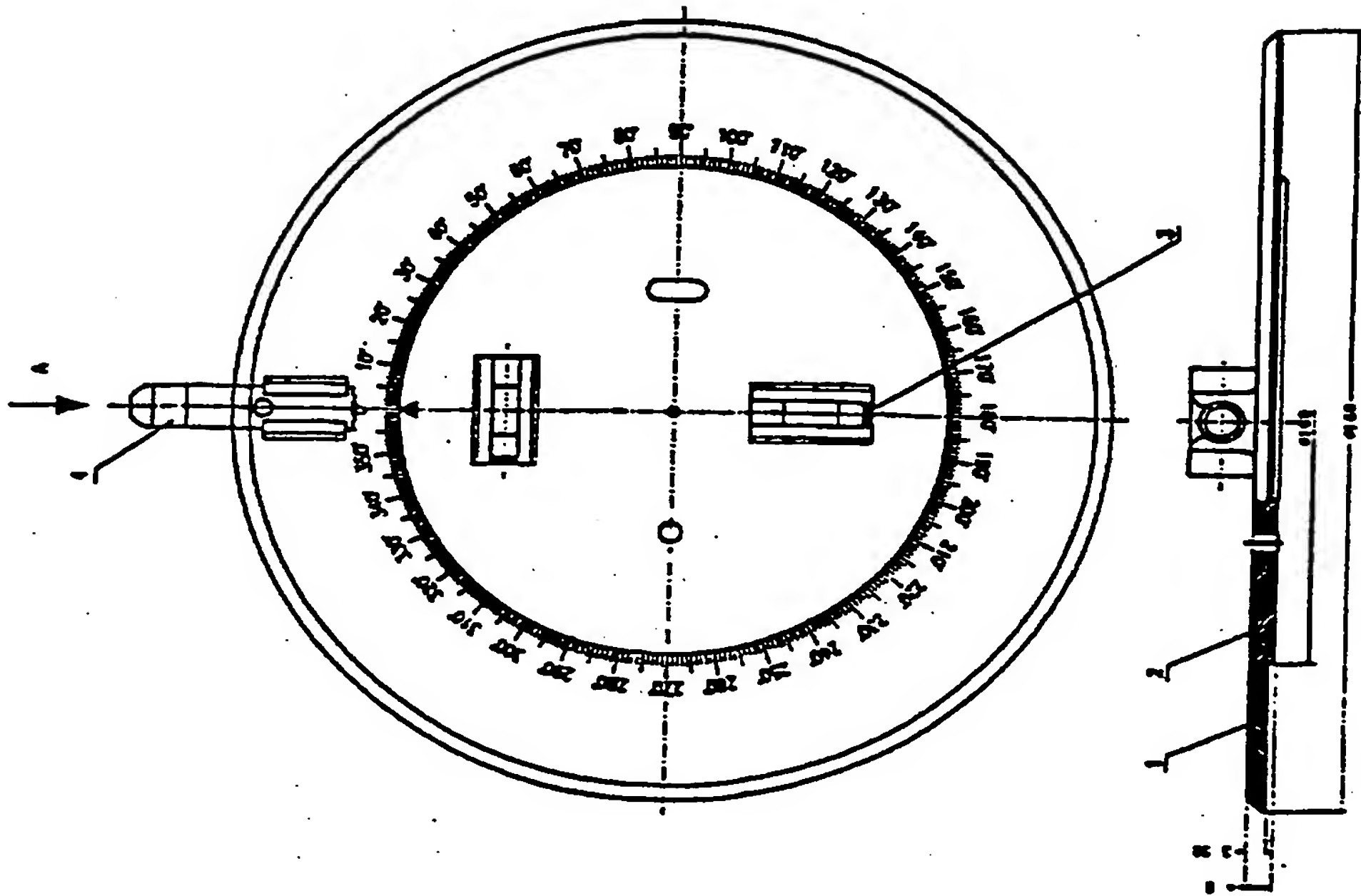
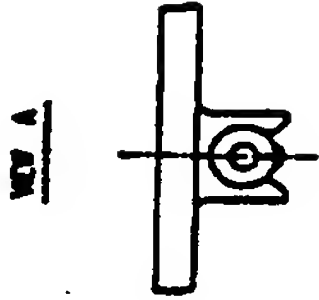


Figure 1



LASER ALIGNMENT DEVICE

This invention relates to a laser alignment device

Lasers have been used for the purposes of alignment in surveying and other devices since laser beams travel in straight lines and are relatively easy to see at a distance.

Laser alignment devices however are relatively expensive, Large and heavy. Moreover they are difficult to use in places where space is limited and access is difficult.

According to the present invention, a module containing a miniaturised laser module is so arranged in conjunction with two spirit vials commonly found in spirit levels and like devices as to provide a projecting alignment device which will allow the projection of a laser beam at distance from the device itself. The device consists of an inner and outer circular plastic disc with cutouts to allow mounting to a vertical or horizontal surface. The user will first place the device in position using the spirit vials. The outer or larger plastic disc can then be rotated using marks provided to any number of degrees from the datum line. The user will then press a button and a laser beam will illuminate as a guide to the position some distance from the device. The device has provision for battery power.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawing in which:-

Figure X shows the invention in plan

Figure Y which shows the invention in side elevation

Referring to the drawing, the alignment device comprises two contra-rotating disc formed from transparent plastic or similar material, with markings as shown to allow accurate alignment of the two sections by 360 degrees.

The inner disc marked 2 has attached to it two Vials of liquid for levelling purposes(3) and allowing either vertical or horizontal alignment. In addition it has two holes(5) of suitable shape and size it to allow it to be fixed to a wall or workpiece by screws or similar. The device can also be used without fixing. The centre point of the whole device(6) and a datum point (7) are marked as shown.

The outer disc marked 1 is marked in degrees of rotation so that the datum point (7) can be aligned at any suitable angle. Moulded into the outer disc is a self contained laser module (4) containing its own integral dry cell battery power source. A button (8) is used to activate the laser beam.

The two discs are held together by means of interlocking plastic parts arranged to allow a snap fit when the device is assembled.

Claims

A Laser alignment device which is substantially smaller, lighter in weight and cheaper in construction than any previous device using the properties of both the laser beam and liquid levelling devices in a new and novel manner. The unique small size of the unit permits its use in confined spaces.



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Claims searched: 1

Examiner: Michael Walker
Date of search: 22 February 1999

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Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.Q): G1F

Int Cl (Ed.6): G01C 9/24, 9/26; 15/00

Other: ON-LINE : WPI

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
|----------|---|--------------------|
| X | GB 2319084 A (DIBBEN) whole document | 1 |
| X | GB 2317450 A (SIMPSON) whole document | 1 |
| X | GB 2226405 A (MORRIS) whole document | 1 |
| X | US 5842282 (TING) whole document | 1 |
| X | US 5604987 (CUPP) whole document | 1 |
| X | US 5531031 (GREEN) whole document | 1 |

X Document indicating lack of novelty or inventive step
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